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The *Immaterial Art Stock* Project

Issues of the Preservation of Works Created within “Shared 3D Spaces”

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Abstract: *Immaterial Art Stock* is a research project initiated in 2012 by two student-researchers, Aurélie Herbet and Frederick Thompson, as part of the EnsadLab EN-ER (Espace Numérique-Extension de la Réalité, Digital Space-Extension of Reality) laboratory. This project focuses on the preservation, documentation and circulation of works created within shared 3D spaces (such as Second Life, OpenSim ou Real Xend). Since the turn of the century, some artists have taken over the hybrid spaces and used them both as a medium and a space to exhibit their work. The three-dimensional aspect of these spaces, combined with the opportunities to interact with the audience via an avatar, have allowed artists to resort to various art forms, such as sculptures, installations, performances, or even concerts or video screenings. Because of their experimental nature and technological instability, these works are doomed to disappear in the short term. As multimedia artists and researchers involved in these spaces and interested in the issues raised by these works, we found it essential to think about preservation techniques. Throughout this article, we introduce the main objectives of our project (the identification, preservation and documentation of these works), as well as the theoretical concerns related to this initiative. We tackle issues relating to the preservation of these works, such as the planned obsolescence of software products, compatibility of programs and ephemeral nature of certain artistic apparatus. What does the work become when taken out of its original context? Does it become a mere “document” on the original work? A piece, a “ghost,” a copy? The aim of this article is to tackle these issues and design more sustainable preservation measures.
Immaterial Art Stock is a research project we have been carrying out since 2012 at the EnsadLab EN-ER (Espace Numérique-Extension de la Réalité) laboratory. This project focuses on the preservation, documentation and circulation of works created within shared 3D spaces (such as Deuxième Monde, Second Life, OpenSim, etc.). Since the turn of the century, many artists have taken possession of these spaces for creative purposes. However, as researches are initiated on the subsequent works, they reveal that many of them are now inaccessible, or even completely lost. All that remains of these works is snippets, a few links, screenshots or articles scattered all over the internet…

As multimedia artists and researchers carrying out projects in 3D spaces, we have been confronted with their extreme frailty. Receptive to contemporary and experimental works created in these spaces, we found it particularly important to carry out a project that would tackle the issue of their preservation and exhibition. This project consists of two steps: the first one is experimental and integrates both an exhibition space (located in OpenSim) and a website; the second one is based on researches conducted on the issue of the preservation of mediatized works.

Our article deals with means to preserve and exhibit works that are created in these spaces. The objective is to study the implemented protocol and strategies, so as to establish the best conditions for the preservation of these works, which are otherwise doomed to disappear in the very short term.

Their preservation raises issues relating, among others, to the obsolescence of software products, compatibility of programs or ephemeral dimension of certain artistic devices. Throughout this article, we will tackle these issues and think of more sustainable preservation methods. We will first recount the history of share 3D spaces and give examples of the pioneer works in this field. We will then present the preservation protocol and exhibition modes used in Immaterial Art Stock. This presentation will be the occasion to question the “nature” of the work when outside its original context: does it become a fragment, a document, a copy? In the long term, how shall we envisage the preservation of these artistic practices?
fig. 1

The Immaterial Art Stock space, modeled by Frederick Thompson in FrancoGrid (screenshot).

Definition of the research field

Historic shared 3D spaces

Throughout the 90s, we have witnessed the emergence of shared 3D spaces, more commonly called “virtual spaces.” A 3D space is a world artificially created with a computer program and hosting a community of users in the form of avatars that can move and interact with one another. These spaces aim to simulate the real world (for instance, it is possible to apply certain laws of physics such as gravity, time, climate and relief), but also every other kind of dreamlike representation of a space.

Deuxième Monde\(^1\) was one of the first multi-sensory shows and heralded 3D spaces as we know them today. Created in 1997 on the initiative of Canal+Multimedia, this space was a simulation of the city of Paris. Via their avatars, visitors would walk around the city with other visitors they could communicate with.\(^2\) For three years, this French persistent universe has welcomed several thousands of users.

In 2003, the American company Linden Lab released Second Life, a 3D space whose content was entirely modeled and appropriated by users, the slogan “Your World, Your Imagination” claiming a world where “nothing is built in advance and no rule is predetermined. As a result, we may

\(^1\) First in the form of a CD-Rom, Deuxième Monde was converted a year later into VRML, available via the Blaxxun plugin.

\(^2\) By forming what is now called a community.
wiggle on a dance floor in *furry*, which is a kind of mix between a fox and a regressive cuddly toy, or go shopping in a three-piece suit, build a copy of 1900s Paris or a garden full of sound sculptures. Part game and part social network, SL allows users to “purchase” a piece of land and interact with one another (via text or voice messages). The platform soon became a paying one and developed its own currency, the *Linden Dollar*. This currency can be exchanged for US dollars in an exchange market established by Linden Lab. *Second Life* became a meeting and free creation space that would allow for the development of artistic creations, debates, conferences, exhibitions and concerts. Following this model, many other shared 3D spaces were simultaneously developed, such as *Entropia Univers* (2003), *Mamba Nation* (2007) and *There* (2003).

In 2007, OpenSimulator—better known as OpenSim—paved the way for servers of multi-sensory *Open Source* worlds. Following this initiative, numerous “open grid” projects were carried out (such as Francogrid, Logicamp, New World Grid, OSgrid). Based on a technology similar to that of SL, these grids constituted spaces hosting users for free. In 2010, there were over 300 3D spaces.

**Overview of works created in these spaces**

Since their inception, these spaces have been the place where artists have carried out varied experiments. They have indeed seen in them both creatively favorable and original exhibition places. In this section, we do not intend to make an exhaustive assessment of the artworks that have existed, or still exist, in these spaces, for there are too many of them. However, a short overview of certain practices will allow us to show the wealth and heterogeneity of these multimedia experiments.

Yann Minh was one of the first cyberartists to explore these spaces. Founder of the Noonauts (a neo-cyberpunk movement), he created *Média ØØØ* in 1983, a multi-sensory multimedia installation exhibited in the Centre Pompidou. This work

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5 A detailed artistic assessment of these practices is available on the *Immaterial Art Stock* website.
6 Paule Mackrous is a researcher in semiology at the NT2 laboratory. Her article *Second Life et l’art* takes an inventory of these practices: [online] http://nt2.uqam.ca/fr/dossiers-thematiques/second-life-et-lart, [accessed May 21st 2013]. Let us also mention the remarkable initiative of NT2, a UQAM research laboratory on hypermedia works, headed by Bertrand Gervais, whose objective is to “promote the research on, as well as the reading, creation and archiving of new forms of texts and works”: [online] http://www.docam.ca/fr.html [accessed November 20th 2013].
heralded the shape of the metaverses to come. Within these spaces, Minh has established his NooMuseum, a hypermedia and transmedia museum in which he modeled La Galerie des Ménines (2004), among other things. Numerous experiments would follow. In 2007, he created his gallery in Second Life before moving part of his creation to OpenSim.

In between creator and creature, prolific artist Patrick Moya, aka Moya Janus regards “virtual worlds” as worlds to explore and inhabit. Since 2006, he has been on a creative spree and his work is now substantial (he makes frescoes, installations, live paintings, wall paintings, ceramics and happenings). This protean work is spread over several thousands of square meters within many 3D spaces (among which are Second Life, Kaneva, FrancoGrid or more recently Cloud Party).

As soon as 2006, 3D spaces also became choice spaces for performances. Let us name Second Front for instance, a group of eight artists inspired by Situs and Fluxus, who have created many performative stagings (featuring dance, music and theater), while humorously criticizing art history and economy history (for instance, they have twisted Leonardo da Vinci’s Last Supper and disrupted one of Second Life’s virtual stock markets by making pizzas rain while singing O Sole Mio). Let us also mention artists Eva and Franco Mattes, also known as 0100101110101101.org, who created from 2006 to 2010 the Synthetic Performances, a re-performing of emblematic historic performances (Marina Abramovic’s Imponderabilia, Valie Export’s Tapp und Tastkino, etc.). Through these performances, they experimented on the testing of the human body, by questioning its place, mediatization and sensoriality in these “virtual” worlds.

Second Life is also the place to make social and political claims, which artists are fully aware of. This is the case of Fred Forest. A digital artist, pioneer of video art, he has worked with new media as early as 1967. In 2008, he created an Experimental territory and social laboratory in Second Life. The objective was to call for an active political involvement within a 3D space, in the form of a “laboratory of ideas for the future,” followed by several critical works (La Corrida in 2008, Ego Cyberstar in 2009, The Trader’s Ball in 2010).

Let us end this overview with an homage to the late Chris Marker, who produced a lot of works in Second Life. In 2008, this movie director invented L’Ouvroir (a reference to the OULIPO, Ouvroir de Littérature Potentielle) with the assistance

of Max Moswitzer. This room in which part of Marker’s work is exhibited includes a movie theater and a museum displaying collages of still and animated images, movies and documentaries. *L’Ouvroir* was much more than a mere “exhibition room” to Marker though. It was his haven of peace and a place where he would meet up with his friends.

![Yann Minh's Galerie des Ménines in the Immaterial Art Stock exhibition room (screenshot).](image)

**Immaterial Art Stock: an empirical research project**

Our *Immaterial Art Stock* project consists of an exhibition room modeled by Frederick Thompson and hosted in *FrancoGrid (OpenSim)* type, as well as a website listing both artists and preserved works, which also provides an artistic assessment of these practices. In order to preserve the artworks created within 3D spaces, we first had to localize and index them. This search has led us to the conclusion that these works were extremely varied and that we needed to identify the issues to be solved in order to preserve them.

Although they are inherently linked with the approach we have adopted for this project, it is essential to make a distinction between preservation and exhibition measures. Designed as a “live archive” (we will develop this concept further in this article), the exhibition room does not aim at preserving the content of the works, but rather at keeping the artist’s work alive, in whole or in part.
The exhibition room in the FrancoGrid

The acquisition of works would be pointless without their upload. In the same way, a collection is worthless if it is not exhibited. Therefore, the act of collecting and preserving an artistic apparatus in a network is closely linked with the act of exhibiting. With the Net art apparatus, these usually distinct processes become joint ones.  

In line with Jean-Paul Fourmentraux’s assertion, we have chosen to exhibit in an immersive space the works that we otherwise store. The *Immaterial Art Stock* exhibition room is hosted by the Francogrid association, which provides spaces (65 000 m² spaces with no height limitation). The architecture of the museum (in terraces) is closely linked to the constraints and possibilities of these spaces: this shape does indeed allow for its endless expansion, within the limits of the available polygons and servers’ capacity. 

It consists of several levels:

• the first floor is the museum reception. It consists of five parts: the first one includes an information center, in which the visitor can discover artists’ biographies and research articles on their works. The second one is a multimedia library providing access to various videos (machinimia, documentaries, testimonies, etc.). The third one is equipped with three interactive screens providing access to more detailed contents, broadcast on the museum website. The fourth includes several tables giving an overview of the works in the museum. By clicking on one of these tables, the visitor is teleported into a space dedicated to the artist. In this way, this apparatus allows the visitor to consult the works and discover the museum in a nonlinear way. The fifth and last part, located on the first floor, is the main browsing tool. By clicking on the “teleporter” type elevator, the spectator directly accesses the space of each work and visits the exhibition room, floor after floor;

• the other levels consist of the floors on which the works and documentation related to the artist are exhibited. When teleported, the avatar arrives in front of the work, which can then be spatially explored: the avatar can also read the artist’s biography, the detailed label of the work and hyperlinks to the artist’s other works.

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fig. 3

The *Immaterial Art Stock* reception space, consisting of five parts (screenshot).

fig. 4

Multimedia library in the exhibition room (screenshot).
fig. 5

Fred Forest’s Mètre carré artistique in the Immaterial Art Stock exhibition room (screenshot).

Exhibition modalities

Numerous examples show that there is a real interest in artistic creation within these spaces, whether it comes from museum institutions (Dresde Museum), private collectors (Tatiana Salomon’s collection in the Île Verte) or universities (Northwestern Michigan College, San Antonio University of Texas). However, an important distinction must be made with regards to our exhibition approach. Indeed, this approach aims to collect only the works created in 3D spaces and is therefore close to the Aire Ville Spattale initiative, a “social, architectural, humanist, digital, inter-network” 3D digital art platform, created by Marc Blieux (aka Marc Moana) and whose design is based on a modeling of architect Yona Friedman’s Spatial City. This space features the works of numerous artists such as Christine Webster, Nathalie Fougeras and Marc Moana himself.

Before creating the IAS exhibition space, a few questions had to be answered. Are the constraints of shared immersive spaces

the same as those of a real space? How does the spectator approach the works? We have decided that we would not systematically display the original work in its entirety. This choice can be explained by our approach to this project: the remediatization of the exhibited work is fragmentary, while its preservation is originally designed to be comprehensive. That is the conclusion we came to after we studied the technical constraints of moving the work into a new space.

Not all pieces of the works exhibited in the museum are similar in terms of expression modes. Actually, Christine Webster’s Limbic (sound topography work), Fred Forest’s Mètre carré artistique and Yann Minh’s Galerie des Ménines all possess different plastic properties that require different exhibition conditions. While a work will focus on sound exploration and the avatar’s perception of space, another work will be more concerned with its political reach and will therefore feature a more detailed label.

Consequently, we had to design museography so as to bring out the specificities of these protean works, by providing the access best suited to their form. To do so, we varied their points of access by allowing visitors both to discover the works in an immersive way via the museum and access detailed information via the website. This two-part approach allows them to adopt multiple perspectives on a work.

Preservation protocol

Following our field study and research on the exhibition space, we established a protocol for the checking and preservation of works: we first had to find and list all existing practices in these 3D spaces (this process is ongoing and the object of continuous attention to the new works that are created). Then we get in touch with the artists and when possible, we meet them. This contact is highly desirable, for during these meetings, we train artists in the tools that allow for the preservation of their works. In this way, we can also collect information on the artists’ approaches, as well as their past and future works. Then, with their consent, the work is moved from a platform to another (for now, we have only moved works from Second Life to OpenSim). The transfer protocol consists of the four following steps:

1. logging in to the platform;

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11 One cannot always retrieve the work in its entirety: for instance, some “objects” do not belong to the artists and their owners sometimes cannot be contacted.

12 This immersive browsing also allows for the sharing and exchange between visitors who are simultaneously present in the exhibition space.

13 All the artists whom we have met (Yann Minh, Christine Webster and Fred Forest) have agreed that such a preservation approach was indeed essential.
2. retrieval of the contents in a TXML file: the objective is to identify the spatial coordinates of every object. For example: the coordinates of the object to preserve are (X: 32,234, Y: 24.310, Z: 8,987);

3. logging out of Second Life and into OpenSim;

4. preservation and re-import of the contents using the TXML file.

When it is impossible to preserve the totality of the work (including the interaction scripts, scenery and sound architecture, .oar file), we try to retrieve part of the data: although this does not offer a total experience of the original work, it allows the spectator to approach it at a given moment. When none of these contents is available, another preservation method consists in presenting a documented testimony to the spectator, including texts, images and videos.

This data is then stored on a local server. Part of it will also be uploaded onto the Immaterial Art Stock website.14 This website is designed as a platform on which to post these preservation initiatives and theoretical corpus. It also features research articles, a regularly updated bibliography, documents related to the artists and their works (these documents take several forms: biographical notes, information sheets on the works, theoretical articles, etc.).

Critical reflection

This project of preservation and exhibition of artworks created within shared 3D spaces raises issues that we will try to solve here, at least in part. The very first issue to tackle is that of the obsolescence of the world containing the exhibition space. Then, why preserve a work in a labile space that is doomed to disappear and reintegrate it into another space with the same constraints? Should we design short-term preservation by adapting to technological progress or, on the contrary, elaborate preservation techniques in the longer term?

The safeguard of digital artworks is the subject of various researches and projects15 that aim to reflect on the issue of the preservation of new artistic forms. To our knowledge, no institution has yet shown any interest in the preservation of artistic works created in 3D spaces.

14 The Immaterial Art Stock website: http://immaterialartstock.wordpress.com/

15 Let us mention, among others, the DOCAM project initiated by The Daniel Langlois Foundation for art, science and technology (FDL) in 2005 (gathering restorers, experts in information sciences, computer specialists, art historians, curators and technicians), the Digital Art Conservation project started in 2005 (gathering, among others, the ZKM, Espace Multimédia Ganter, l’École supérieure des arts décoratifs of Strasbourg and the Haute école des arts of Bern) and the more recent initiative of the Hypermedia Archeology Lab (“Laboratoire de réactivation des œuvres disparues”) conducted by the École Supérieure d’Art of Avignon.
The *Immaterial Art Stock* initiative aims to develop new preservation strategies related to the constraints of these works, but it also continues the works carried out by the Langlois Foundation, foundation for art, science and technology based in Montréal, and the Solomon R. Guggenheim Museum of New York. Between 2001 and 2006, these two institutions created the *Variable Media Network*, a project whose objective is to reflect on the issue of technological obsolescence, establish a typology of the various media art forms and develop preservation strategies in line with these artistic practices, in association with several institutions. This network shares and communicates its experiences, while proposing a common reflection on new preservation strategies related to the transformation of digital works. The *Variable Media* concept was developed in 1998 by Jon Ippolito, curator at the Guggenheim Museum of New York. This term “covers all works whose materiality is not fixed once and for all. […] Each work is considered individually, more like a score than a finished, immutable object.”

We are extremely interested in this idea of the work taken as a score, outside its medium, able to update itself in a new space: it is an essential part of the preservation technique of the *Immaterial Art Stock* project. Instead of considering the work as a “finished object,” it is envisaged as a transposable and re-updateable object in a new space: “As media art can be ephemeral or ever-evolving, its preservation and documentation require that we accept and adapt this transitory or transitional state. Denying this state would amount to getting rid of the fundamental nature of this art form. However, in order to understand all the consequences of this transitory state, a radical paradigm shift is necessary.”

If the FrancoGrid was ultimately doomed to disappear, it would still be possible to move the work to a space compatible with this format, *via* the .oar file. In this case, this operation could no longer be carried out as the work’s code would require a re-writing. Although the work is likely to look like the original one, its code will be different.

Another project entitled *Archiving the Avant-Garde: Documenting and Preserving Variable Media Art* was also a source of inspiration for the *IAS* research method. Launched by the Berkeley Art Museum/Pacific Film Archive, this initiative takes over the concepts developed by the Langlois Foundation and consists in “documenting and disseminating strategies to describe and preserve works that cannot be updated through traditional means. It aims to contribute to the development of the evaluation, cataloguing and accessibility of works in


collections. This initiative brings together several institutions and museums (California State University/Berkeley Art Museum and Pacific Film Archive, Solomon R. Guggenheim Museum, Cleveland Performance Art Festival and Archive, Franklin Furnace Archive and Rhizome.org). This union of institutions allows researchers and museum curators to expand their preservation strategies and reflect together on the issues raised by these actions.

In this sense, the *Immaterial Art Stock* project is not designed as a “museum” *per se*, but rather as a presentation and update space for works, a “live archive” as described by Anne Laforet in her report entitled *Net art et institutions artistiques et muséales, problématiques et pratiques de la conservation*: “In this perspective, the museum would be a live archive, a space dedicated to documentation, including pieces of works that can be updated in many ways, and which would combine the interrelational aspect of systematic archiving with a more qualitative and standardized ‘museum’ approach.” The museum is both an exhibition space and a room for critics and researchers to work on the artistic practices created in 3D spaces.

**Conclusions and development perspectives of the *Immaterial Art Stock* project**

How can we make the IAS research project initiative last in the medium or even long term? The lability of 3D spaces, instability of the formats in which these works are created and little public awareness of these spaces make it difficult to ensure the durability of this initiative. To solve these issues, several perspectives are envisaged or already adopted.

The *Immaterial Art Stock* exhibition space aims to provide the audience with a better access to the works created in 3D spaces. As stated previously, we too frequently observe a certain ignorance of these spaces, and even a reluctance to discover them. Unfortunately, the technological access to these platforms limits the visibility of the artists and works featured in our exhibition. Consequently, we have chosen to base our approach on a global communication providing the audience with several points of entry into our museum, which can then take on various forms and develop in digital, web and physical places.

The first notion to take into account is the persistent aspect of these platforms. This characteristic requires that we constantly

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maintain the platforms and enhance the animation, so as to make the exhibition space livelier. This can be done through various processes, such as the simplification of the access to information, further investment to optimize the quality of informative contents by ensuring their regular update (we believe that the long-term support of artists is essential to ensure the durability of the place). In order to vitalize the exhibition space, we are currently setting up a “scenic” space designed for performances and plays. Besides, the scenography is re-designed to allow for a better browsing within the exhibition spaces.

The third step, which is fundamental, will take place in the physical space. Beyond the laboratory project, whose lifetime is quite short, we will need the involvement of institutions and venues hosting the works created in digital spaces. Several institutions exhibit or promote digital creation (through conferences, workshops or round tables), namely La Gaîté Lyrique, the space dedicated to new media of Paris’s Centre Pompidou and the Espace Multimédia Gantner in Bourgogne, to name but a few. In the short term, the objective is to get in touch with those institutions to join forces and work on this issue. Actually, these recent works are not part of the contemporary artistic heritage yet. We believe that they should be recognized and integrated into institutional heritage projects.

The last aspect is at the heart of the EN-ER research laboratory, in which this project was initiated. 3D spaces currently require that a software product be setup. As such, they cannot be directly accessed through a web page. However, the emergence of the WebGL technology should soon allow for the display of 3D pages in browsers. Improved accessibility will contribute to the better visibility of the works and better quality of the 3D contents. Along with the increase in the capacity of network flows, the evolution of digital media (computers, tablets, smart phones) allow us to envision the future immersive platforms, which will be more accessible and beautiful.

References


20 A research project concurrently carried out by Thomas Morisset, a student-researcher participating in the EnsadLab EN-ER (Espace Numérique-Extension de la Réalité) research program.

21 This will be the subject of a workshop to be held in the École nationale supérieure des Arts Décoratifs.


